



CELLULAR AND MOLECULAR MODELS OF HUMAN PATHOLOGIES: 4 LINES

Description: Research carried out by doctors from three consolidated groups recognized by the Government as excellent, led by Eloi Garí (2009 SGR 559), Daniel Sanchis (2009 SGR 346) and Mario Encinas (2009 SGR 740), which develop 4 research lines with their own financing. All the lines have as objective the study of the molecular and cellular mechanisms that control cell proliferation and differentiation, as well as the processes of cell death, which has great relevance to understand the basis of several human pathologies such as cancer, neurodegenerative ailments or cardiac pathologies.

Cellular cycle

The research line focuses on studying the internal mechanisms that regulate the division of eukaryotic cells. The general objective of this research is to contribute to a better knowledge of the processes that are altered during the loss of the integrity of the genome and in pathologies such as cancer.

More information: <http://www.irbllleida.org/en/research/7/cell-cycle> [<http://www.irbllleida.org/en/research/7/cell-cycle>]

Responsible:

Members:

- Dr. Eloi Garí Marsol
- Dr. Jordi Torres Rosell
- Dr. Neus Colomina Gabarrella
- Dr. Francisco Ferrezuelo Muñoz
- Dr. Celia Casas Herranz

Cellular signaling and apoptosis

The research line aims to:

- a. Study the neurotrophic factors and the intracellular signaling pathways activated by these factors in relation to their function on survival and neuronal death
- b. Study the processes that regulate the cell death in the heart tissue.

More information: <http://www.irbllleida.org/en/research/10/cell-signalling-and-apoptosis-group> [<http://www.irbllleida.org/en/research/10/cell-signalling-and-apoptosis-group>]

Responsible:

Members:

- Dr. Daniel Sanchis Morales
- Dr. Marta Llovera Tomas



Oncogenic and development signaling

The research line focuses on performing a genetic approach to the mechanisms that regulate cell signaling pathways activated by the proto-oncogene network, and its regulation by putative Sprouty tumor suppressor. This research has implications in various fields such as renal and peripheral nervous system development, or the biology of tumors of neuroendocrine origin.

More information: <http://www.irbllleida.org/en/research/8/oncogenic-signalling-and-development> [<http://www.irbllleida.org/en/research/8/oncogenic-signalling-and-development>]

Responsible: Dr. Mario Encinas Martin

Calcium signaling and cell differentiation

The line of research focuses on studying the molecular mechanisms involved in cell proliferation, differentiation and migration, as well as calcium signaling and its impact on processes such as the establishment of nerve connections, tumor progression and cardiac pathologies.

More information: <http://www.irbllleida.org/en/research/9/calcium-cellular-signalling> [<http://www.irbllleida.org/en/research/9/calcium-cellular-signalling>]

Responsible:

Members:

- Dr. Judit Herreros Danés
- Dr. Carles Cantí Nicolàs

STRESS IN BIOLOGICAL MODELS AND AGING: 5 LINES

Description: Research carried out by doctors from three consolidated groups recognized by the Government as excellent, led by Enrique Herrero / Joaquim Ros (2009 SGR 196), Albert Sorribas (2009 SGR 809) and Reinald Pamplona (2009 SGR 735), who develop 5 lines of research with its own financing. All the lines have the objective of studying the effects of stress on biological systems, which is especially relevant to understanding the bases of aging and neurodegeneration.

Molecular Biology of Yeasts

The research line has as main objective the study of the effect of environmental stress conditions on cell proliferation, as well as transduction pathways and enzymatic systems involved in the defense and repair of stress damage.



More information: <http://www.irbllleida.org/en/research/11/molecular-biology-of-yeast> [<http://www.irbllleida.org/en/research/11/molecular-biology-of-yeast>]

Responsible:

Members:

- Dr. Enric Herrero Perpiñan
- Dr. Gemma Belli Martínez

Biochemistry of Oxidative Stress

The main objective of the research line is to study the impact of oxidative stress on cellular functions and human diseases such as, for example, Friedrich's ataxia.

More information:

<http://www.irbllleida.org/en/research/32/neuronal-signalling-unit> [<http://www.irbllleida.org/en/research/32/neuronal-signalling-unit>]

<http://www.irbllleida.org/en/research/12/oxidative-stress-biochemistry> [<http://www.irbllleida.org/en/research/12/oxidative-stress-biochemistry>]

Responsible:

Members:

- Dr. Joaquim Ros Salvador
- Dr. Elisa Cabiscol Català
- Dr. Jordi Tamarit Sumalla
- Dr. Rosa Soler Tatché

Metabolic Pathophysiology

The main objective of the research line is to study the role of oxidative stress in the physiological process of aging and in the pathological processes that occur in diseases associated with aging (diabetes, obesity, etc.), as well as in neurodegenerative diseases.

More information: <http://www.irbllleida.org/en/research/13/metabolic-physiopathology> [<http://www.irbllleida.org/en/research/13/metabolic-physiopathology>]

Responsible:

Members:

- Dr. Reinald Pamplona Gras
- Dr. Manel Portero Otín
- Dr. M. Victoria Ayala Jove
- Dr. Jordi Boada Pallas



Mathematical Modeling of Metabolic Processes

The research line focuses on the development of methods for the systemic analysis of metabolic processes.

M o r e i n f o r m a t i o n :

<http://www.irbllleida.org/en/research/14/systems-biology-and-statistical-methods-for-biomedical-research> [<http://www.irbllleida.org/en/research/14/systems-biology-and-statistical-methods-for-biomedical-research>]

Responsible:

Members:

- Dr. Albert Sorribas Tello
- Dr. Rui Carlos Vaqueiro de Castro Alves

Signaling in Yeast

The research line focuses on the molecular, genetic and cellular study of some signaling pathways that participate in the cellular response to oxidative stress.

More information: <http://www.irbllleida.org/en/research/15/cell-signalling-in-yeast> [<http://www.irbllleida.org/en/research/15/cell-signalling-in-yeast>]

Responsible: Dr. M^a Ángeles de la Torre Ruiz

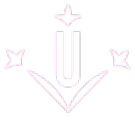
NEUROSCIENCE AND DISEASES OF THE NERVOUS SYSTEM: 5 LINES

Description: Research carried out by doctors from two consolidated groups recognized by the Government as excellent, led by Josep Esquerda / Jordi Calderó (2009 SGR 370) and Loreta Medina (2009 SGR 547), and by a clinical research group (led by Francisco Purroy) of solid trajectory in terms of publications and obtaining external financing, which develop 5 research lines with their own financing. All the lines have as objective the study of the nervous system and of the diseases of the nervous system produced by disorders of neurodevelopment, neurodegeneration or due to cerebral ischemia.

Pathology of the Motor Neuron

The research line focuses on the study of the cellular and molecular mechanisms that regulate neuronal survival and death, as well as the analysis of certain aspects related to the development of the nervous system that could also intervene in certain pathological situations, such as neurodegenerative diseases.

More information: <http://www.irbllleida.org/en/research/27/experimental-neuromuscular-pathology> [<http://www.irbllleida.org/en/research/27/experimental-neuromuscular-pathology>]



Responsible:

Members:

- Dr. Jordi Calderó Pardo
- Dr. Olga Tarabal Mostazo

Experimental neuromuscular pathology

The research line focuses on the study of the cellular and molecular bases of neuromuscular diseases and, particularly, of amyotrophic lateral sclerosis.

More information: <http://www.irblleida.org/en/research/27/experimental-neuromuscular-pathology> [<http://www.irblleida.org/en/research/27/experimental-neuromuscular-pathology>]

Responsible:

Members:

- Dr. Josep E. Esquerda Collel
- Dr. Anna Casanovas Llorens

Development and Evolution of the Brain

The research line focuses on studying the development and evolution of the cerebral amygdala, an essential structure for the control of emotions and social behavior, which is altered in several neurodevelopmental disorders, such as autism or schizophrenia, and other psychiatric disorders.

More information: <http://www.irblleida.org/en/research/24/brain-development-and-evolution> [<http://www.irblleida.org/en/research/24/brain-development-and-evolution>]

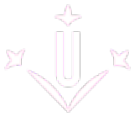
Responsible:

Members:

- Dr. Loreta Medina Hernández
- Dr. Ester Desfilis Barceló
- Dr. Antonio Abellán Ródenas

Molecular and Developmental Neurobiology

The research line focuses on the characterization of new molecular mechanisms of the formation of neuronal circuits of the nervous system. These studies will help understand the mechanisms that operate in pathological conditions related to neurological and psychiatric disorders.



More information: <http://www.irblleida.org/en/research/28/molecular-and-developmental-neurobiology> [<http://www.irblleida.org/en/research/28/molecular-and-developmental-neurobiology>]

Responsible:

Members:

- Dr. Joaquim Egea Navarro
- Dr. Carme Espinet Mestre

Clinical Neurosciences

The research line focuses on the study of transient cerebral ischemia in patients, doing clinical-radiological and biomarker studies to establish new predictors of recurrence in these patients.

More information: <http://www.irblleida.org/en/research/26/clinical-neurosciences> [<http://www.irblleida.org/en/research/26/clinical-neurosciences>]

Responsible:

Members:

- Dr. Gerard Piñol Ripoll

MEDICINE, NURSING AND HEALTH: 15 LINES

Description: Research carried out by doctors from three consolidated groups recognized by the Generalitat, led by Matias Guiu (2009 SGR 794), Juan Verdaguer (2009 SGR 805) and Monserrat Rué (2009 SGR 632), and four other groups with a solid research trajectory endorsed by numerous publications of high impact, obtaining external funding, and direction of doctoral theses, led by Elvira Fernández, Ferran Barbé, José Reñé and José Manuel Porcel. In addition, there is an emerging group of nursing research (led by Pilar Jürschik and Juan Torres), with important international collaborations with prestigious nursing research groups (from Canada, Belgium, Holland and Finland), which develops research in the field of aging, epidemiology and education for health. Among all these groups, 15 research lines are offered, which have as object the research in the field of the clinic (study of various pathologies), pharmacology and experimental therapeutics, epidemiology, aging and education for health.

Applied Epidemiology

The research line focuses on the study of epidemic outbreaks, investigation of risk factors for communicable diseases, and estimation of coverage of periodic preventive activities in primary health care.

More information: <http://www.irblleida.org/en/research/1/applied-epidemiology> [<http://www.irblleida.org/en/research/1/applied-epidemiology>]

Responsible:

**Members:**

- Dr. Pere Godoy Garcia
- Dr. Jaume March Llanes

Pharmacoepidemiology

The research line aims to evaluate the effectiveness, safety and efficiency of medical technology linked to the use of medicines, either as prevention or treatment of diseases.

More information: <http://www.irbllleida.org/en/research/2/pharmacoepidemiology> [<http://www.irbllleida.org/en/research/2/pharmacoepidemiology>]

Responsible: Dr. Joan Antoni Schoenenberger Arnaiz

Biological Foundations of Mental Disorders

The research line focuses on the study of several mental disorders, such as bipolar disorder, the effects of lithium treatment and the cognitive changes that take place in these ailments.

More information: <http://www.irbllleida.org/en/research/3/biological-foundations-of-mental-disorders> [<http://www.irbllleida.org/en/research/3/biological-foundations-of-mental-disorders>]

Responsible:

Members:

- Dr. Maria Mur Lain
- Dr. Josep Pifarré Paredero

Ailments of the Pleura

The research line focuses on the study of cytology and tumor markers with molecular biology techniques in the pleural fluid.

More information: <http://www.irbllleida.org/en/research/4/research-group-of-cancer-biomarkers-grebic> [<http://www.irbllleida.org/en/research/4/research-group-of-cancer-biomarkers-grebic>]

Responsible: Dr. José Manuel Porcel Pérez

Mammary pathology

The research line focuses on the study of new biomarkers in mammary tumors.



More information: <https://www.linkedin.com/in/antonio-llobart-cussac-27799477/> [<https://www.linkedin.com/in/antonio-llobart-cussac-27799477/>]

Responsible: Dr. Antoni Llobart Cussac

Respiratory pathology

The research line focuses on two areas of interest: the study of respiratory disorders during sleep and the study of respiratory infections.

More information: <http://www.irbllleida.org/en/research/5/translational-research-in-respiratory-medicine-group> [<http://www.irbllleida.org/en/research/5/translational-research-in-respiratory-medicine-group>]

Responsible:

Membres:

- Dr. Ferran Barbé Illa
- Dr. Miguel Falguera Sacrest
- Dr. Manuel Sánchez de la Torre

Experimental Surgery

The research line focuses on two main aspects:

- a. Study the response of biomechanics of abdominal wall closure after an intervention
- b. Improve safety and prediction models in relation to the follow-up of post-ICU patients.

More information:

<http://www.irbllleida.org/en/research/6/intensive-medicine> [<http://www.irbllleida.org/en/research/6/intensive-medicine>]

<http://www.irbllleida.org/en/research/22/experimental-surgery> [<http://www.irbllleida.org/en/research/22/experimental-surgery>]

Responsible:

Members:

- Dr. Juan Olsina Kissler
- Dr. Javier Trujillano Cabello

Experimental Pharmacology

The research line focuses on the study of cell death processes and their modulation in order to identify new therapeutic approaches to human disease, especially cancer.



More information: <http://www.irblleida.org/en/research/17/pharmacology-unit> [<http://www.irblleida.org/en/research/17/pharmacology-unit>]

Responsible:

Members:

- Dr. Jacint Boix Torras
- Dr. Judit Ribas Fortuny

Genetics of Complex Ailments

The research line focuses on the study of the genetic variability of the vitamin D receptor and its role in the susceptibility to infection by the HIV virus and the clinical progression of AIDS.

More information: <http://www.irblleida.org/en/research/18/genetics-of-complex-diseases> [<http://www.irblleida.org/en/research/18/genetics-of-complex-diseases>]

Responsible: Dr. Joan Fibla Palazón

Immunology and Endocrinology

The research line focuses on the study of the mechanisms of loss of immunological tolerance in autoimmune endocrine diseases, and more specifically in Type 1 Diabetes (T1D), and its application in the diagnosis and treatment of these diseases.

More information: <http://www.irblleida.org/en/research/19/immunology-and-immunopathology-group-griip> [<http://www.irblleida.org/en/research/19/immunology-and-immunopathology-group-griip>]

Responsible:

Members:

- Dr. Joan Verdaguer Autonell
- Dr. Conchi Mora Giral

Experimental Nephrology

The research line focuses on the study of mineral metabolism in patients with chronic renal failure and the genetic influence on the development of secondary hyperparathyroidism.

More information: <http://www.irblleida.org/en/research/20/vascular-and-renal-translational-research-group> [<http://www.irblleida.org/en/research/20/vascular-and-renal-translational-research-group>]

Responsible:

**Members:**

- Dr. José M. Valdivielso Revilla

Oncological Pathology

The research line focuses on studying the molecular alterations of endometrial, thyroid and skin cancers, in correlation with the clinical and pathological characteristics.

More information: <http://www.irbllleida.org/en/research/16/oncological-pathology> [<http://www.irbllleida.org/en/research/16/oncological-pathology>]

Responsible:**Members:**

- Dr. Xavier Matias-Guiu
- Dr. Rosa Maria Martí Laborda
- Dr. Xavier Dolcet Roca
- Dr. Felip Vilardell Villegas
- Dr. Antonieta Salud Sàlvia

Digestive and Oncohematological Pathology

The research line focuses on the study of colorectal carcinogenesis and oncohematological processes, in particular lymphomas and other lymphoproliferative processes.

More information:

<http://www.irbllleida.org/en/research/21/clinical-and-experimental-research-in-digestive-and-hematological-patholc> [<http://www.irbllleida.org/en/research/21/clinical-and-experimental-research-in-digestive-and-hematological-patholc>]

<http://www.irbllleida.org/en/research/23/endocrine-bariatric-and-metabolic-surgery> [<http://www.irbllleida.org/en/research/23/endocrine-bariatric-and-metabolic-surgery>]

Responsible:**Members:**

- Dr. Josep Reñé Espinet
- Dr. Carme Piñol Felis
- Dr. Xavier Gómez Arbones



Nursing and Health

The research focuses on the following areas:

1. Development of intergenerational learning strategies through interaction between children and adults
2. Improvement of citizen education and evidence-based nursing practices to reduce falls in the elderly, and improve the treatment of ulcers, incontinence, pain, as well as palliative care.

More information: <http://www.irbllleida.org/en/research/31/research-group-of-health-care-grecs> [<http://www.irbllleida.org/en/research/31/research-group-of-health-care-grecs>]

Responsible:

Members:

- Dr. Joan Blanco Blanco
- Dr. Teresa Botigué Satorra
- Dr. Miguel Ángel Escobar Bravo
- Dr. M. Luisa Guitard Sein-Echaluce
- Dr. José Fidel Molina Luque
- Dr. Carmen Nuin Orrio
- Dr. Anna Espart Herrero
- Dr. Erica Briones Vozmediano
- Dr. Esther Rubinat Arnaldo

Economic Analysis and Health

The research focuses on making mathematical models to assess risks versus benefits in various strategies of sounding, early detection and treatment of breast diseases.

M o r e i n f o r m a t i o n :
<http://www.irbllleida.org/en/research/14/systems-biology-and-statistical-methods-for-biomedical-research> [<http://www.irbllleida.org/en/research/14/systems-biology-and-statistical-methods-for-biomedical-research>]

Responsible: Dr. Montserrat Rué Monné